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REMARKS

In accordance with the present invention, it has been discovered that CREB binding protein (CBP) cooperates with upstream activators involved in the activation of transcription by signal dependent transcription factors. For example, cyclic AMP regulates the transcription of many genes (e.g., PEPCK, the rate limiting enzyme in gluconeogenesis) through protein kinase A mediated phosphorylation (at Ser133) of transcription factor CREB. Phosphorylated Ser133 CREB coordinates with a single residue of CBP, Arg600, to form a CREB:CBP complex.

It has further been discovered that the recruitment of CBP to certain inducible promoters is involved in transmitting inductive signals to the RNA polymerase II complex. Accordingly, assays employing CBP and fragments thereof have been developed for the identification of compounds which disrupt the ability of signal dependent transcription factors to activate transcription. Such compounds have utility in inhibiting gluconeogenesis, which is exhibited in diseases such as non-insulin dependent diabetes mellitus.

By the present communication, claims 1-4 and 6 are amended to define Applicants' invention with greater particularity. These amendments do not add any new matter as they are fully supported throughout the specification and claims as originally filed. In view of these amendments, claims 7-10 have been cancelled without prejudice.

It is respectfully submitted that entry of the amendments submitted herewith is proper because these amendments place the present application in condition for allowance or at a minimum, in better condition for appeal. It is further submitted that, upon entry of this amendment, fewer claims will be under consideration, claims 7-10 having been cancelled herein. Accordingly, entry of the amendments submitted herewith is respectfully requested.

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After amending the claims as set forth above, claims 1-4 and 6 are now pending in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, beginning on page 2 of this paper under "Listing of Claims" with an appropriate defined status identifier.

I. Objection

The objection to Applicants' request for transfer of the paper copy and computer readable form of the Sequence Listing from the parent case to the present case is acknowledged. To obviate this objection, Applicants submit herewith a paper copy of the Sequence Listing from parent U.S. Patent Application Serial Number 08/961,739 (filed on October 31, 1997), as originally submitted on October 6, 1999. Further, Applicants provide herein a request, conforming to the requirements of MPEP § 2422.05, for the transfer of the computer readable form of the Sequence Listing from the parent application.

Request for Transfer of the Computer Readable Form of Sequence Listing

In accordance with 37 CFR 1.821(e), Applicants hereby request that the computer readable form of the Sequence Listing from parent application Serial Number 08/961,739, as submitted in a separate amendment on October 6, 1999, be transferred to the present application. Provided herewith is a paper copy of the Sequence Listing from the referenced parent application. I certify that the paper copy of the Sequence Listing from the parent application, submitted herewith, is identical to the computer readable copy filed in the parent application, both of which are identical to the sequence information contained in the present case. It is understood that the Patent and Trademark Office will make the necessary change in application number and filing date for the instant application.

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II. 35 U.S.C. § 101

The rejection of claims 7 and 8 under 35 U.S.C. § 101 as allegedly lacking utility is respectfully traversed for at least the reasons already of record.

Specifically, Applicants respectfully disagree with the Examiner's assertion that "the disclosed invention [of claims 7 and 8] is inoperative and therefore lacks utility" (Office Action, page 3). Contrary to the Examiner's assertion, it is respectfully submitted that the fragments contemplated by claims 7 and 8 are operative as, for example, inhibitors of activation of cAMP and mitogen responsive genes. Indeed the specification explicitly sets forth this activity of the claimed fragments at, for example, page 17, lines 5-14. Applicants respectfully submit that these fragments are therefore, operative and that their use in the inhibition of transcription is a credible and substantial utility.

However, in efforts to reduce the issues and expedite prosecution, this rejection has been rendered moot by the cancellation of claims 7 and 8. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

III. 35 U.S.C. § 112, 2nd paragraph

A. Claims 1-8

The rejection of claims 1-8 under 35 U.S.C. § 112, 2nd paragraph based on the asserted insufficiency of Applicants' previous request to transfer the Sequence Listing of parent application U.S. Patent Application Serial Number 08/961,739 (Office Action, page 4) is respectfully traversed and has been obviated by Applicants' submission herewith of a paper copy of the Sequence Listing from the referenced parent application and a request, which conforms with the requirements of MPEP § 2422.05, for the transfer of the computer readable form of the

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Sequence Listing from the referenced parent application. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

B. Claim 6

The rejection of claim 6 under 35 U.S.C. § 112, 2nd paragraph on the basis that the phrase "mutant fragment" is allegedly unclear (Office Action, page 5) is respectfully traversed.

Applicants respectfully disagree with the Examiner's assertion that "it is not clear if the claim is intended to read on mutant fragments which include alterations in the 'all or a portion of CBP which binds to CREB,' or if the alterations are outside of such a region" (Office Action, page 5). Contrary to the Examiner's assertion, from the context of the claim, it is respectfully submitted that one of skill in the art would readily understand that the claim embraces mutant fragments containing a mutation either inside or outside of the region of CBP which binds to CREB.

However, in efforts to reduce the issues and expedite prosecution, the phrase "mutant fragment" has been deleted from claim 6 by amendments submitted herewith. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

C. Claim 2

The rejection of claim 2 under 35 U.S.C. § 112, 2nd paragraph, as allegedly being indefinite is respectfully traversed. Applicants respectfully disagree with the Examiner's assertion that it is allegedly unclear whether this claim reads on fragments of "any CBP with a residue corresponding to the arginine at SEQ ID NO:2, or is intended to read on only fragments of SEQ ID NO:2 which comprise this residue" (Office Action, page 6). While the prior claim language is submitted to be clear, in order to reduce the issues and expedite prosecution, it is

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respectfully submitted that this rejection has been obviated by the amendments submitted herewith, wherein claim 2, as amended herein, specifically requires an arginine residue "corresponding to position 600 of SEQ ID NO:2." Reconsideration and withdrawal of the this basis for rejection are therefore, respectfully requested.

IV. 35 U.S.C. § 112, 1st paragraph (Written Description)

The rejection of claims 1, 2, and 5-8 under 35 U.S.C. § 112, 1st paragraph as allegedly failing to comply with the written description requirement is respectfully traversed for at least the reasons of record.

Applicants respectfully disagree with the Examiner's assertion that the claims read on "any nucleic acid encoding any fragment of CBP that binds to CREB" and that "Applicant has not provided sufficient descriptive support for the claimed genus" (Office Action, page 6). Contrary to the Examiner's assertion, it is respectfully submitted that the claimed genus is more than adequately described with reference to defined structural and functional properties.

As acknowledged by the Examiner, the court found in *Eli Lilly*, 43 USPQ2d at 1406, that the written description requirement under U.S.C. § 112, 1st paragraph is satisfied through "disclosure of relevant, identifying characteristics, i.e., structure or other physical and/or chemical characteristics, by functional characteristics coupled with a known or disclosed correlation between function and structure" (Office Action, page 7). It is respectfully submitted that the specification more than adequately satisfies the written description requirement, consistent with the court's decision in *Eli Lilly*, through disclosure of structural and functional properties.

Further, it is respectfully submitted that the "relevant, identifying characteristics" referred to by the court in *Eli Lilly* are listed in the alternative, and therefore, disclosure of "structure or other physical and/or chemical characteristics" would satisfy this requirement. It is respectfully

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submitted that Applicants have more than satisfied this requirement through disclosure of both structural properties and functional properties, as well as a correlation between structure and function.

However, in efforts to reduce the issues and expedite prosecution, claims 1-4 and 6 have been amended to describe with even greater particularity the structural properties of the claimed nucleic acids. For example, claim 2, as amended herein, recites a nucleic acid encoding a fragment of CBP, wherein the claimed fragment meets each of the following structural properties,

- having “substantially the same as the sequence of residues 461-661 of SEQ ID NO:2,”
- comprising “residues 634-648 of SEQ ID NO:2,” and
- including “the arginine residue corresponding to position 600 of SEQ ID NO:2.”

It is respectfully submitted that the defined nucleic acids of the present claims fully satisfy the written description requirement through recitation of specific structural properties. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

V. 35 U.S.C. § 112, 1st paragraph (Enablement)

The rejection of claims 1, 2, and 5-8 under 35 U.S.C. § 112, 1st paragraph as allegedly failing to satisfy the enablement requirement is respectfully traversed for at least the reasons already of record.

In particular, Applicants respectfully disagree with the Examiner’s assertion that “Applicant has not provided sufficient information to enable those in the art to make or use any fragment or mutant of CBP wherein the fragments or mutants are able to bind CREB ... without

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und[ue] experimentation" (Office Action, page 8). Contrary to the Examiner's assertion, these claims are directed to nucleic acids encoding defined fragments with defined structural and defined functional properties. Thus, the claims are not directed to any fragment or mutant of CBP, but rather to those fragments that comprise defined regions of SEQ ID NO:2 and bind to CREB. Moreover, it is respectfully submitted that based on the guidance and working examples provided in the specification, in conjunction with the high level of skill of those in the art and that which is known in the art, the skilled artisan could readily make and use the invention without undue experimentation.

However, in efforts to reduce the issues and expedite prosecution, claims 1, 2, and 6 have been amended herein to define Applicants' invention with greater particularity, with regard to structural properties, and claims 7 and 8 have been cancelled. For example, as currently amended, claim 1 requires a fragment consisting essentially of residues 634-648 of SEQ ID NO:2. Claim 2, as currently amended, requires that embraced nucleic acids encode fragments of CBP that are "substantially the same sequence as the sequence of residues 461-661 of SEQ ID NO:2." Claim 6 requires that embraced nucleic acids have the same sequence as residues 1-661 of SEQ ID NO:2. It is therefore, respectfully submitted that the claims fully satisfy the enablement requirement under 35 U.S.C. § 112, 1st paragraph. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

VI. 35 U.S.C. § 102(a)

The rejection of claims 1 and 6 under 35 U.S.C. § 102(a) as allegedly being anticipated by Chrivia et al. (Nature 365:856-9, 1993) is respectfully traversed for at least the reasons already of record. Specifically, it is respectfully submitted that the nucleic acids embraced by the claims comprise fragments which are not taught by the reference. Therefore, the reference does not anticipate the present claims.

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However in efforts to reduce the issues and expedite prosecution, claims 1 and 6 have been amended to define Applicants' invention with greater particularity. Thus, Applicants' invention as defined, for example, by amended claim 1, distinguishes over Chrivia by requiring nucleic acids "consisting essentially of a sequence encoding residues 634-648 of SEQ ID NO:2." The Chrivia reference does not disclose or suggest such a fragment and therefore does not anticipate the present claim.

Applicants' invention, as defined by amended claim 6, further distinguishes over Chrivia by requiring a fragment that "has the same sequence as residues 1-661 of SEQ ID NO:2" and comprises residues 634-648 and the arginine corresponding to position 600. The fragment of CBP corresponding to residues 1-661 described by Chrivia is modified so as to contain a phosphorylation site at the C-terminus. The present claims contain no such mutations. Therefore, Chrivia does not anticipate the claims as presently amended.

Accordingly reconsideration and withdrawal of this rejection are respectfully requested.

VII. 35 U.S.C. § 103

The rejection of claims 2-5 and 7 under 35 U.S.C. §102(a) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as allegedly being obvious over Chrivia is respectfully traversed (Office Action, page 11), for at least the reasons already of record.

Specifically, claims 2-4 define nucleic acids which encode fragments that are not taught by the reference. Therefore, the reference does not anticipate the present claims. Moreover, there is no suggestion or motivation to select nucleic acids comprising this fragment. Thus, the burden of establishing prima facie obviousness has not been met.

However, in efforts to reduce the issues and expedite prosecution, claims 2-4 are amended and claim 7 is cancelled herein. Claim 5 was cancelled in the previous response. As

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stated in the previous section, independent claim 2, as amended herein, requires that the embraced fragments have substantially the same sequence as residues 461-661 and includes residues 634-648 and the arginine at position 600 of SEQ ID NO:2. These requirements distinguish the present claims over the reference because nucleic acids encoding such a fragment are not taught by the reference.

Therefore, because the reference does not teach any of the claimed nucleic acids, it does not anticipate the claimed nucleic acids. Moreover, there is no suggestion or motivation to modify any such nucleic acids. Thus, the Examiner has not met the burden of establishing a case of prima facie obviousness. Accordingly, Applicants respectfully request reconsideration and withdrawal of these rejections.

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CONCLUSION

In view of the above amendments and remarks, the present application is respectfully submitted to be in condition for allowance. Accordingly, reconsideration and favorable action with respect to the pending claims are respectfully requested. In the event any issues remain to be resolved in view of this communication, the Examiner is invited to contact the undersigned at the number given below so that a prompt disposition of this application can be achieved.

Respectfully submitted,

Date May 6, 2005

By 

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Enclosure: Paper copy of Sequence Listing from parent application Serial No. 08/961,739